

FLOOD SAFETY

in Snohomish County



On March 22, 2014, a mudslide blocked the north fork of the Stillaguamish River and SR 530, and flooded adjacent properties and homes. An estimated 10 million cubic yards of material covered a square mile of Snohomish County, permanently altering the landscape and floodplain.

As we look ahead to fall and the potential for flooding, it is important for residents to have updated information that will help protect their homes and families. This is especially important for communities affected by the SR 530 slide. The floodplain near the slide will be different than in past years, and will continue to change as the river expands its channel through the slide area.

Regardless of where you live, flooding can occur quickly and without warning. This flood safety guide provides information and tips to help you and your family stay informed and prepared:

- Learn about Snohomish County's history of flooding
- Learn about flood risks and channel migration
- Learn how to safeguard your property
- Learn how to prepare for flooding
- Learn how to recover from a flood
- Reference Snohomish County emergency contacts

More information, including a real-time flood warning system, is available at www.floods.surfacewater.info.

Learn about floodplains



Snohomish River, between the Snohomish estuary and Everett

Floodplains provide natural benefits

Floodplains are the low-lying areas adjacent to rivers, lakes and coastline prone to being inundated in times of heavy rains, snowmelt or high tides. They provide areas of open space, noted for their scenic beauty and recreational opportunities. In their natural state, floodplains benefit our community in ways that include:

- **Natural Flood and Erosion Control**—reducing flood velocities, peak flows, and sedimentation; providing flood storage and conveyance
- **Water Quality Benefits**—filtering polluted runoff and moderating temperature fluctuations
- **Groundwater Recharge**—promoting infiltration and aquifer recharge; reducing frequency and duration of low surface flows
- **Biological Productivity**—providing fertile soils that promote vegetative growth, biodiversity and ecosystem stability
- **Fish and Wildlife Habitats**—providing habitat for many species, including waterfowl and rare and endangered species

Protect natural floodplain functions

Clear debris and trash. Help prevent flooding and maintain water quality by keeping the storm drains, culverts, ditches and swales near your property clear of debris and trash. This debris could reduce flood storage capacity and increase flooding on your property.



Report illegal dumping when you see it. It is illegal to dump trash, hazardous chemicals or other materials into a river, stream or drainage system. If the situation is a severe threat to human health or the environment, please call 911; otherwise please call the Snohomish County Public Works Surface Water Management (SWM) Water Quality Hotline at 425-388-6481 or use the county's online form (www.snoco.org, search "water quality complaint").

Snohomish County has a history of flooding

Snohomish County typically experiences flooding between November and February, following periods of heavy rain after snow. Since 1962, there have been 17 floods of such record proportions that they met the qualifications for Presidentially Declared Disasters. Historically, the county has experienced major flooding every three to five years. The last flood of impact was on March 22, 2014 on the North Fork Stillaguamish River, following the SR 530 mudslide that dammed the river.

The primary areas affected by flooding are the county's largest rivers—the Sauk, Stillaguamish, Snohomish, Skykomish and Pilchuck rivers. Historical flows for all these rivers, with the exception of the Sauk, are available on the county's website (www.snoco.org, search "Flood Warning System"). Historical flows for the Sauk River are available on US Geological Survey's website (<http://waterdata.usgs.gov/WA/nwis/current/?type=flow>, under the Skagit River Basin).



Flooding in Monroe, January 2009



SR 530 mudslide/flooding, March 2014

Flooding can occur outside the rural floodplain areas as well, and even in urbanized areas served by stormwater infrastructure. In these areas, heavy rainstorms sometimes overwhelm local drainage systems or storm drains can become blocked by debris.



An undersized culvert led to flooding in Marysville in 2005.

Drainage problems on your property or in your neighborhood?

Request a drainage investigation by calling SWM at 425-388-3464.

Know your property's flood risk

Learn about your property's flood risk and the flood risk of a property before you buy

Floodplains are mapped as Special Flood Hazard Areas (SFHAs) on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs). These maps identify the flood zone designations for a broad area. Within SFHAs, there is a 1 percent chance of flooding in a given year or a 26 percent chance within a 30-year period.

To find the flood risk for your property:

- **Create your own FIRMette**—a flood insurance rate map for an individual property that identifies the property's flood zone designation(s). Follow the instructions available (http://h2opartnersusa.com/nfiptraining/pdfs/How_to_Make_a_FIRMette_Using_Catalog_Search.pdf).



- **Consult your local planning department.** Snohomish County Planning and Development Services (PDS) offers a Flood Hazard Determination service that provides information on the property's flood risk and regulatory base flood elevation. The fee is \$206. For more information, please contact PDS at 425-388-3311, ext 2731.
- **See FEMA's Map Service Center** (<http://msc.fema.gov>) for flood zone designations and historic maps.

Find out if channel migration could affect your property

If your property is on a river, learn about the river's flood history and potential to migrate. For some general information about rivers and how they move through time, see the Washington State Department of Ecology publication, "Living with the River" (http://www.fema.gov/pdf/about/regions/regionx/LivingWithTheRiver_Floods.pdf). Check with SWM at 425-388-3464 to see if there is a flood study available for a section of river near your property.



The migration in one section of the Pilchuck River resulted in the loss of more than 72 feet of bank within a 12-year period. (photo: Feb. 2012)

What is channel migration?

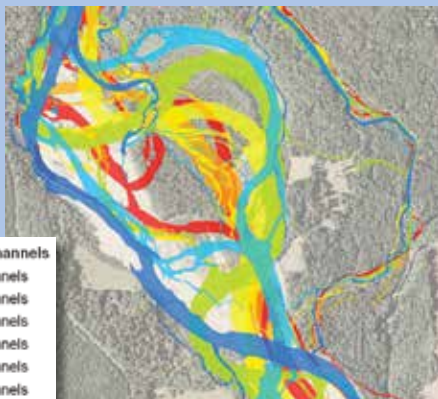
Channel migration is the process by which a river or stream moves over time. It is a dynamic process that includes depositing and scouring of sediments that can shift the course of the channel. The Shoreline Master Program Guidelines define Channel Migration Zones (CMZs) as including areas within which a river can be expected to migrate over time due to the soil composition and hydrology in the area. Channel migration areas are being mapped as funding allows.

Example of Channel Movement

Lower
Sauk River
Historic
Photo Analysis

Mapped Historic Channels

- 2006 wetted channels
- 1992 wetted channels
- 1981 wetted channels
- 1972 wetted channels
- 1956 wetted channels
- 1944 wetted channels



Other risks

For information on other risks that might affect the flood safety of your property, check the following publications:

- If your property is near a dam (www.livingneardams.org/)
- If your property is near a levee (www.asce.org/Content.aspx?id=2147488910)
- If your property is near a landslide, erosion or volcanic hazard area (<http://wa-snohomishcounty.civicplus.com/DocumentCenter/View/14368>)

Safeguard your property

Build responsibly

Snohomish County has participated in the National Flood Insurance Program since 1984. The program requires the county to adopt and enforce minimum floodplain development regulations to reduce future flood risks, and in return, the federal government makes flood insurance available to county homeowners for protection against flood losses.

All development activity in the floodplain—including filling, grading, excavation, new construction, substantial improvement or repairs—requires a flood hazard permit.

If you're making flood repairs, keep in mind that if the market value of repairs or improvements to existing structures equals or exceeds 50 percent of the original market value, the property is considered to be substantially damaged. This means that the structure must be brought up to current county floodplain development standards in order to reduce future flood risks.

For more information, please contact Snohomish County's flood hazard specialist at 425-388-3311, ext. 2731.



Consider property protection measures

- ✓ **Purchase sandbags** at your local hardware store, and check the US Army Corps of Engineer's website (www.nws.usace.army.mil) to learn how to use them.
- ✓ **Floodproof your home.** See the FEMA guide on retrofitting at www.fema.gov for information on how to protect your utilities and electronics, foundation walls, sewer connections, basement and more. Please check with Snohomish County's flood hazard specialist regarding any required permits. (425-388-3311, ext. 2731)
- ✓ **Consider elevating or relocating your home** to reduce future flood losses. Snohomish County administers two programs that compete for FEMA grants on behalf of willing property owners with qualifying projects. For more information, please visit www.floods.surfacewater.info or contact SWM at 425-388-3464.

For advice on flood protection measures for your property, please contact David Wilson, P.E., of SWM, 425-388-3464, ext. 4619.



Insure your home

Flood insurance is the only sure way to be reimbursed for flood losses. Standard homeowner or commercial policies do not cover damage caused by flooding. Federal disaster assistance is only available if the President declares a disaster, and it is typically a loan that must be paid back with interest. For a \$50,000 loan at 4 percent interest, the monthly payment would be \$240 per month (\$2,880/year) for 30 years.

Compare the potential cost of your losses to the cost of flood insurance. In Snohomish County, the average annual premium for a home in the special flood hazard area (SFHA) is \$904 per year; outside the SFHA, that figure is \$401 per year. (FEMA, July 2014) (Note: Some of the difference can be attributed to the amount and type of coverage purchased.) The county makes flood insurance more affordable through its participation in the Community Rating System, which earns a discount of 30 percent on annual premiums inside the SFHA and 10 percent outside the SFHA.

You can purchase flood insurance through an insurance agent. Visit the website below or contact the NFIP at 888-379-9531. Please keep in mind that there is a mandatory 30-day waiting period on all new flood insurance policies.



Visit www.floodsmart.gov and view the video "What Could Flooding Cost Me?"

Prepare for flooding

Before a flood (or other emergency), have a plan to keep your family safe

Take these important steps:

- Prepare a disaster supplies kit for yourself, family members and pets. For a suggested list of contents, see www.ready.gov/floods and view “make a kit.”
- Prepare a list of emergency phone numbers, and make sure everyone in your family has a copy. Program them into your cell phones. Identify an out-of-area contact.
- Determine a safe evacuation route uphill to higher ground. Learn which roads may be closed by calling the Snohomish County Public Works Road Maintenance Division at 425-388-7500 or visiting www.snoco.org, search “roads central.”
- Develop a safety plan for your livestock and household pets. Learn where you can take your livestock and pets if you have to evacuate, as well as how to safely transport them and the food/medicine/supplies they might need.
- Document your property and belongings before a flood occurs.
- Collect essential records to ensure you can take your vital information with you quickly.



Visit www.ready.gov/floods to see suggested items for your family's disaster supply kit.



- Keep your cell phone charged and your gas tank full. Be prepared to move your car to higher ground if necessary.
- Check out the “Map Your Neighborhood” program on the Washington State Military Department Emergency Management Division website (www.emd.wa.gov/myn). This page provides tips and information to help you prepare for disasters.

A hand-crank radio is a small portable radio that receives the seven National Weather Service (NWS) bands, AM/FM bands and occasionally shortwave frequencies. It's good to have one in your emergency supply kit. The crank turns a generator, charging the internal batteries and allowing it to be powered. A minute of cranking converts into hours of listening.



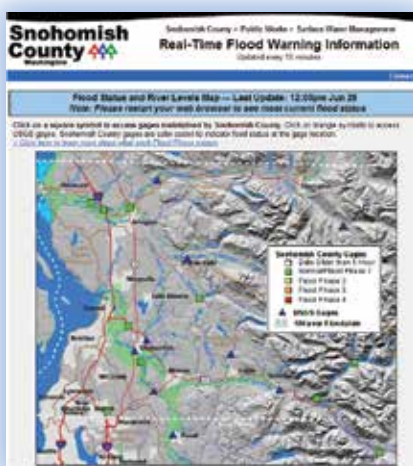
Stay calm during a flood

- Monitor local news and Snohomish County web and social media sites for emergency updates. Check with the Snohomish County Department of Emergency Management (DEM) regarding current information on flood levels and road closures to help determine the best evacuation route.
- If you have time before evacuating, turn off all utilities at the main power switch. Do not touch any electrical equipment unless it is in a dry area.
- Do not attempt to walk, wade or drive through flooded areas. Sixty-six percent of deaths during flooding occur when drivers make the mistake of driving through floodwaters.
- If your car has stalled in a flooded area, abandon it and walk to safety in the direction you came from.
- If you cannot safely leave your house, bring your family pets and supplies to the second floor or roof of your house and call 911 for help.



Stay current

- Listen to local news.
- Have a solar battery or crank radio to monitor local media.
- Call Snohomish County's 24-hour flood information hotlines:
 - Skykomish, Snoqualmie and Snohomish Rivers:
425-388-3653
 - Stillaguamish River:
425-388-3702
- Check out Snohomish County's online Flood Warning System, which is updated every 15 minutes during a flood. Visit www.floods.surfacewater.info and select "Real Time Flood Warning Information."
- Visit www.snoco.org, @snocounty on Twitter, or SnohomishCountyWA on Facebook.



Recover from flooding

Recovering from a flood

- Listen to the local news and return home only after authorities indicate that it is safe.
- Before re-entering your home, be aware of potential structural damage that could lead to collapse, as well as potential gas leaks, electrical shorts and live wires.
- If damage appears to be significant, contact PDS or your city's planning department to have a building official visit and determine if your home has been substantially damaged.
- Have a professional check your heating system, electrical panel, outlets and appliances before use. Call utility companies to have utilities turned back on. You cannot turn on your main gas supply yourself.
- Have your septic system checked if you suspect damage. For assistance, call Snohomish Health District at 425-339-5250.
- For the safety of your water supply and food, please see the "Emergency Flood Sanitation" information on Snohomish Health District's website. (www.shd.org)
- Wear protective gear and clean your home as recommended to stop mold and mildew. See the FEMA publication on the subject at http://www.fema.gov/pdf/rebuild/recover/fema_mold_brochure_english.pdf.
- Make a permanent mark on your residence or property to show the height of the floodwaters.
- Document your losses and contact your insurance agent.
- Financial assistance may be available following a federal disaster declaration. Please call DEM at 425-388-5088 for details.



Mark the water height on your residence for future reference.



Dispose of your damaged, unwanted items in a legal manner. Special collection services and disposal rates may be available for flood victims. Call Snohomish County Public Works at 425-388-3425 to learn about the flood-related disposal options available.

Emergency Contacts

Snohomish County

- 24-hour hotlines with updated information during floods:
 - Skykomish, Snoqualmie, and Snohomish Rivers, 425-388-3653
 - Stillaguamish River, 425-388-3702
- Disaster supply kit prep: DEM, 425-388-5060, dem@snoco.org
- Disposal of flood debris: Solid Waste, 425-388-3425
- Flood preparedness: www.floods.surfacewater.info, dem@snoco.org
- Flood studies available for portions of the main rivers: SWM, 425-388-3464
- Inspection of flood-damaged structures: PDS, 425-388-3311, ext. 2731
- Post-flood recovery assistance: DEM, 425-388-5060, dem@snoco.org
- Real-time Flood Warning System (updated every 15 minutes):
<http://gismaps.snoco.org/fws>
- Report dike/levee damage: DEM, 425-388-5060, dem@snoco.org
- Report illegal dumping: SWM Water Quality Hotline, 425-388-6481
- River conditions: DEM, 425-388-5060, dem@snoco.org
- Road conditions/road closures/report road or bridge damage:
Road Maintenance, 425-388-7500, www.snoco.org, search “roads central”
- Sandbagging crew information: DEM, 425-388-5060, dem@snoco.org
- Urban flooding and drainage assistance: SWM, 425-388-3464
- Water quality problems: SWM, 425-388-3464

Other agencies

- FEMA Assistance Center (flood assistance, flood insurance and flood protection): 1-800-621-3362, www.fema.gov
- Red Cross, Snohomish County Chapter (disaster preparedness):
425-252-4103, www.snohomishcounty.redcross.org
- Snohomish Health District (sanitation, septic tank or well problems):
425-339-5250, www.snohd.org

Cities

If you live in any of the following cities, please call or email the city directly for floodplain information:

- Arlington: 360-403-3400, www.arlingtonwa.gov
- Darrington: 360-436-1131, www.town.darrington.wa.us
- Gold Bar: 360-793-1101, www.cityofgoldbar.us
- Granite Falls: 360-691-6441, www.ci.granite-falls.wa.us
- Index: 360-793-2488
- Monroe: 360-794-7400, www.monroewa.gov
- Snohomish: 360-568-3115, www.ci.snohomish.wa.us
- Stanwood: 360-629-2181, www.ci.stanwood.wa.us
- Sultan: 360-793-2231, www.ci.sultan.wa.us



Be prepared for the flood season ahead!

Title VI and Americans with Disabilities Act (ADA) Information: It is Snohomish County's policy to assure that no person shall on the grounds of race, color, national origin, or sex, as provided by Title VI of the Civil Rights Act of 1964, as amended, be excluded from participation in, be denied the benefits of, or otherwise be discriminated against under any County sponsored program or activity. For questions regarding Snohomish County Public Works Title VI Program, or for interpreter or translation services for non-English speakers, or otherwise making materials available in an alternate format, contact the Department Title VI Coordinator via email at spw-tilevi@snoco.org or phone 425-388-6660. Hearing/speech impaired may call 711.

Información sobre el Título VI y sobre la Ley de Americanos con Discapacidades (ADA por sus siglas en inglés): Es la política del Condado de Snohomish asegurar que ninguna persona sea excluida de participar, se le nieguen beneficios o se le discrimine de alguna otra manera en cualquier programa o actividad patrocinada por el Condado de Snohomish en razón de raza, color, país de origen o género, conforme al Título VI de la Enmienda a la Ley de Derechos Civiles de 1964. Comuníquese con el Department Title VI Coordinator (Coordinador del Título VI del Departamento) al correo electrónico spw-tilevi@snoco.org, o al teléfono 425-388-6660 si tiene preguntas referentes al Snohomish County Public Works Title VI Program (Programa del Título VI de Obras Públicas del Condado de Snohomish), o para servicios de interpretación o traducción para los no angloparlantes, o para pedir que los materiales se hagan disponibles en un formato alternativo. Los que tienen necesidades comunicativas especiales pueden llamar al 711.

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